

# EXHIBIT 3

OPENING EXPERT REPORT OF DR. KEVIN C. ALMEROOTH

1 YouTube Music app for Android, ChromeOS, and iOS, and (iv) the Spotify app for Android,  
2 ChromeOS, and iOS. *See, e.g.*, Google's Resp. to Sonos's Interrog. No. 13 at 9-11; GOOG-  
3 SONOSWDTX-00005793-802; GOOG-SONOSNDCA-00056732-77.

4       126. The Cast technology incorporated into the Accused Google Players enables each  
5 Accused Google Player to operate in one of two mutually exclusive modes at any given time: (1) a  
6 mode in which the Accused Google Player is configured to play back audio individually (referred  
7 to internally by Google as a "standalone" or "non-group" mode) or (2) a mode in which the  
8 Accused Google Player is configured to play back media in synchrony with one or more other  
9 Accused Google Players as part of a group (referred to internally by Google as a "multizone" or  
10 "multiroom" grouped mode). *See, e.g.*, GOOG-SONOSWDTX-00048731 at 47 (referring to a  
11 "non-group" mode as a "standalone" mode); GOOG-SONOSWDTX-00005793 at 93 (describing  
12 how to listen to music on an Accused Google Player that is operating in standalone mode); GOOG-  
13 SONOSWDTX-00007068 at 68 ("Group any combination of Google Nest or Google Home  
14 speakers and displays and Chromecast devices together for synchronous music throughout the  
15 home."); GOOG-SONOSWDTX-00040384 at 85 (document titled "Multizone Audio Design"  
16 stating "[t]he primary goal of multiroom audio is to play out the audio in sync across all the devices  
17 in a group"); GOOG-SONOSNDCA-00056732-77.

18       127. Further, the Cast technology incorporated into the Accused Google Players  
19 supports two different types of groups: (1) a "speaker group," also referred to internally by Google  
20 as a "static" group, which is a grouping of Accused Google Players for synchronous playback that  
21 is predefined by a user and saved for future use, and (2) a "dynamic" group, which is a grouping  
22 of Accused Google Players for synchronous playback that is defined by a user "on the fly" during  
23 active playback and is not saved for future use. *See, e.g.*, Google's Third Suppl. Resp. to Sonos's  
24 Interrog. No. 13 at 9-11 (explaining that "[u]nlike static groups, which may be created in the  
25 Google Home App before media starts playing; dynamic groups are formed when media is playing  
26 and an additional speaker is added to the playback group"); GOOG-SONOSWDTX-00048393;  
27 5/10/2022 K. MacKay Dep. Tr. at 57:4-66:17. I have focused my infringement analysis on  
28 Google's functionality for creating and launching a "speaker group" type of group.

1 manager and corporate designee confirming that “if you were to tap [the] ‘Play music’ text” in the  
2 Google Home app’s main page for “one of the devices” that device would “then play music on its  
3 own”). Thus, each Accused Google Controller is programmed with the functional capability to  
4 “serve[] as a controller” for a Google networked audio system comprising at least three Accused  
5 Google Players during times when at least a first Accused Google Player in the Google networked  
6 audio system is operating in a “standalone mode” in which the first Accused Google Player “is  
7 configured to play back media individually” (as opposed to a grouped mode in which the first  
8 Accused Google Player is configured for grouped playback).

9       409. For example, after being set up to operate in a Google networked audio system for  
10 which an Accused Google Controller is serving as a controller, each Home, Home Mini, Home  
11 Max, Nest Audio, Nest Mini, Nest Hub (formerly branded as the Home Hub), Nest Hub Max, and  
12 Nest Wifi Point is capable of operating in a “standalone mode” in which it is configured to play  
13 back media individually (rather than as part of a group) by virtue of processing and outputting  
14 audio in the form of sound from one or more built-in speakers, and each Chromecast, Chromecast  
15 Ultra, and Chromecast with Google TV is capable of operating in a “standalone mode” in which  
16 it is configured to play back media individually (rather than as part of a group) by virtue of  
17 processing and outputting audio in the form of an audio signal that is provided to a connected  
18 external device with speakers (such as a TV). *See* Google’s Resps. to Sonos’s RFA Nos. 4-5;  
19 SONOS-SVG2-00060265; SONOS-SVG2-00060233; SONOS-SVG2-00060242; SONOS-  
20 SVG2-00055114; 5/10/2022 K. MacKay Dep. Tr. at 259:10-260:11.

21       410. In fact, “standalone mode” is the default operating mode for any Accused Google  
22 Player. Specifically, after being set up to operate in a Google networked audio system for which  
23 an Accused Google Controller is serving as a controller, an Accused Google Player will always  
24 begin in a “standalone mode” in which the Accused Google Player “is configured to play back  
25 media individually,” and will remain in that “standalone mode” unless and until a group that  
26 includes the Accused Google Player is created, saved, and then subsequently launched, at which  
27 point the Accused Google Player will transition from the standalone mode to a grouped mode.  
28 Thereafter, the Accused Google Player is operable to transition back and forth between standalone

1 mode and grouped mode depending on how the users interact with the Google system.

2       411. The capability of each Accused Google Player to operate in a “standalone mode”  
3 in which the Accused Google Player “is configured to play back media individually” is confirmed  
4 by Google’s own documents. *See, e.g.*, GOOG-SONOSWDTX-00005793-802 at 93 (describing  
5 how to listen to music on an Accused Google Player operating in standalone mode); GOOG-  
6 SONOSNDCA-00056732-77 at 41, 48, 61 (describing various scenarios where a Cast receiver is  
7 operating in a standalone mode).

8       412. Additionally, during testing, I observed the capability of each Accused Google  
9 Controller to serve as a controller for a Google networked audio system comprising at least three  
10 Accused Google Players while at least a first Accused Google Player in the Google networked  
11 audio system is operating in a “standalone mode” in which the first Accused Google Player “is  
12 configured to play back media individually.” *See* Section XI. Specifically, as observed during  
13 testing, an Accused Google Controller can serve as such a controller while a Accused Google  
14 Player is operating in a standalone mode in which the Accused Google Player is not engaging in  
15 active playback of media, or while the Accused Google Player is operating in a standalone mode  
16 in which the Accused Google Player is engaging in active playback of media, depending on the  
17 scenario. *Id.* In both scenarios, the Accused Google Player is operating in a standalone mode in  
18 which the Accused Google Player is configured for individual playback (as opposed to grouped  
19 playback).

20       413. One example of this functionality is illustrated in the following screenshots from  
21 the testing I oversaw, which show an example Accused Google Controller (the Android-based  
22 Google Controller) serving as a controller for a Google networked audio system comprising three  
23 Accused Google Players named “Kitchen,” “Master Bedroom,” and “Living Room,” where each  
24 of the Accused Google Players is operating in standalone mode and none of them is engaging in  
25 active playback of media:

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